POOR LEGIBILITY

ONE OR MORE PAGES IN THIS DOCUMENT ARE DIFFICULT TO READ
DUE TO THE QUALITY OF THE ORIGINAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL EXPOSURE RESEARCH LABORATORY
P.O. BOX 93478 • LAS VEGAS, NV 89193-3478

NOV 12 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

MEMORANDUM

SUBJECT: Perchlorate Analysis Goose Farms Superfund Site

FROM: Ken W. Brown, Director, TSC
Environmental Sciences Division

TO: Farnaz Saghafi, RPM
Region II

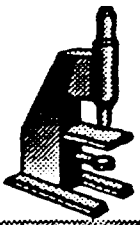
Farnaz, please find attached the data package for the analyses of Goose Farms groundwater samples. These samples were analyzed by LAS Laboratories for perchlorate by ion chromatography, using the California Department of Health Services (CDHS) method dated June 3, 1997, Revision 0. The applicable laboratory SOP is LAS-0019-R07, 8/97, Rev. 7. The CDHS method was used because EPA, to my knowledge, does not have an approved validated method for the analysis of perchlorate.

The laboratory sample holding time was two days: samples were received on October 15, 1997 and analyses were conducted on October 17, 1997. Laboratory practices included the preparation of fresh standards daily, and a seven-point calibration with potassium perchlorate at the start of analyses. The concentrations used for calibration were 0, 5, 5, 12.5, 25, 250, and 1250 ppb. A 250 ppb standard of Mg $(CC10_4)_2$ was also run. At the end of the day, a 250 ppb standard in reagent water was analyzed and the recovery checked, with an acceptance window of 90-110%.

As we discussed, none of the samples had detectable (method detection limit of 1 ppb) levels of perchlorate. There were no problems noted with the data package. Also for your information, a one-page discussion of perchlorate analysis is included from Air and Management News. This paper was written by Eric Miller of LAS Laboratories.

If you need additional information and/or clarification pertaining to the attached, please call me at (702) 798-2270.

cc: with Attachment
Kevin Mayer, Region IX



LAB TALK

DETERMINATION OF PERCHLORATE IN WATER AND SOIL SAMPLES: AN APPLICATION OF ION CHROMATOGRAPHY

Submitted by:
Eric Miller, Ph.D.
LAS Laboratories, Inc.

The perchlorate anion (ClO_4^-) is among the numerous environmental contaminants which can adversely affect human health. Because the perchlorate ion has the same electronic charge and approximately the same size as the iodide ion, it can mimic iodide in many enzymatic reactions. Thus, above a certain concentration (10 mg per day for an adult), perchlorate intereferes with the ability of the thyroid gland to properly utilize iodide. Indeed, perchlorate is used as a medical treatment for hyperthyroidism.

Since perchlorate does not occur naturally, its presence in water and soil samples is due to human activity. Because perchlorate is a powerful oxidizing agent, it is used as a reagent in analytical chemistry (as perchloric acid) and in the manufactures of explosives and solid rocket fuel (as ammonium perchlorate). In an aqueous solutions, perchlorate salts and perchloric acid act as strong electrolytes; that is they are almost completely dissociated into perchlorate anions and metal or hydrogen cations. Because of this property, perchlorate in water samples (or in aqueous extracts of soils) can be readily detected and quantified by ion chromatography.

Ion chromatography is a liquid chromatographic technique in which the analytes are positively or negatively charged ions, rather than the neutral molecules which are analyzed by other types of liquid chromatography. For the determination of anions (such as chloride, sulfate, perchlorate, etc.), the chromatographic column is packed with an anion exchange resin, comprising inert resin beads to which positively charged radicals have been permanently attached. Thus, the entire column packing constitutes a large, positively charged porous solid to which negative ions are electrostatically attracted. In ion chromatography, the eluent is typically water in which a suitable salt has been dissolved. As the eluent solution flows through the column, anions from the eluent displace the anions already present in the column. The displaced anions are thus moved through the column toward the detector. Because different anions have different relative affinities for the column packing and for the eluent, the different types of anions are separated from one another and elute from the column at different times. By comparing the elution times and peak heights or areas of a sample with those of a standard, anions present in the sample can be identified and quantified, usually at ppm or ppb concentrations. Detection of eluted ions is normally accomplished by measuring the increase in electrical conductivity they engender in the eluent.

Recently, personnel of the California Health and Welfare Agency developed a procedure for determining perchlorate by ion chromatography with suppressed conductivity detection. Because perchlorate is a large, monovalent anion, it has a relatively low affinity for water. Thus, it is found necessary to use an eluent containing a comparatively high concentration electrolyte (sodium hydroxide solution) to elute the analyte in a reasonable amount of time (about eight minutes). The requisite analytical sensitivity is obtained by injecting a relatively large sample volume onto to the column. Sensitivity is also improved by passing the eluted sample through a strongly acidic cation exchange column. This treatment, called "suppression", replaces sodium ions in the eluent with hydrogen ions, which combine with the hydroxide ions in the eluent to form water. By converting the sodium hydroxide in the eluent water, suppression decreases the background electrical conductivity of the eluent from that of a solution of sodium hydroxide to that of pure water. The resulting decrease in baseline noise and drift enables the detection of much lower concentrations of perchlorate than would be possible in an unsuppressed eluent.

Perchlorate is currently manufactured and stored in the Las Vegas metropolitan area. Furthermore, about ten years ago, a second perchlorate manufacturing facility in the Las Vegas area was destroyed when a batch of the product (ammonium perchlorate) exploded. These facilities are located upstream of a major water impoundment - Lake Mead - which is part of the Colorado River system. Because California uses this water, the Health and Welfare Agency tested Lake Mead water samples for the presence of perchlorate. Perchlorate was detected, although in concentrations less than the 18 ppb limit set by the State of California. On being notified of these results, LAS Laboratories, Inc., of Las Vegas, adopted the California procedure for perchlorates. Determination of the method sensitivity according to EPA-accepted protocols showed a 5.0-ppb reporting detection limit and a 1.0-ppb instrument detection limit. Furthermore, it was found that anions commonly found in ground water, in lake water, in tap water, and in soil do not interfere with the determination of perchlorate. Thus, the method is both analytically accurate and simple, since no sample pre-treatment (other than filtration) is necessary. Analysis of tap water from various locations throughout the Las Vegas area indicates a perchlorate concentration of 10-ppb, which is roughly half the California limit. Surface water samples taken from above and below the current perchlorate manufacturing facility show a dramatic increase (to about 1680-ppb) downstream of the facility. One sample of well water taken from the facility site had a concentration of 3.7 million-ppb (0.37 % by weight) perchlorate. A program is currently underway to measure perchlorate concentrations throughout the site of the former manufacturing facility.

Clearly, the ion chromatographic method for perchlorate has provided valuable information for the characterization of water and soil samples, and for the identification of pollution sources, in the Las Vegas area. The sensitivity of the method, its freedom from interferences, and its simplicity should make it useful for the examination of other sites as well.

LAS Laboratories Inc.

LOCKHEED MARTIN ADVANCED ENVIRONMENTAL SYSTEMS

ANALYTICAL DATA REPORT

FOR

PERCHLORATE BY IC

LOG-IN NUMBER: L10742

QUOTATION NUMBER: Q728949

DOCUMENT FILE NUMBER: 1016123

LAS LABORATORIES, INC. • 975 Kelly Johnson Drive • Las Vegas, Nevada 89119-3705
Telephone 702-361-0220 • Facsimile 702-361-8146

October 20, 1997

Lockheed Martin Advanced Environmental System
Testing & Treatability Laboratory
950 Pilot Road Suite A
Las Vegas, NV 89119

RE: **Log-in No.** **L10742**
Quotation No. **Q728949**
Document File No. **1016123**

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 16 October 1997.

The temperature of the cooler upon receipt was 4°C. All sample containers did not coincided with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data, please call Jenny Davis at (702) 361-3955, ext 213. If you are unable to contact the Client Services Representative, please call Dan Fischer, Client Services Manager, at extension 240.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Jenny L Davis

Jenny L. Davis
Client Services Representative

cc: Client Services
Document Control

CASE NARRATIVE
INORGANIC NON-METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

- All samples were received on October 16, 1997. The samples were logged in as L10742. The samples were prepared and analyzed for:

  A. Perchlorate by IC

- Sample GF-RB-01 (L10742-5) was used for the matrix spike and matrix spike duplicate analysis.

Method Blanks

- The concentration levels of requested analytes in method blanks were below the reporting detection limits.

Holding Time Requirements

- All samples were analyzed within method-specific holding times.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Shellee McGrath
Prepared By

October 20, 1997
Date

LAS Laboratories, Inc.
DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 02/28/97]

For Use on the Analytical Data Reporting Forms	
B	*For CLP Analyses Only* -- Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	*For Routine, Non-CLP Analyses Only* -- Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL), or instrument detection limit (IDL) for client samples that require "B" flags.
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	*For CLP Analyses Only* -- Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	*For CLP Reporting Only* -- Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	*For AAS Only* -- Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a[1]	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b[1]	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

[1] Used as footnote designations on the QC summary form.

SAMPLE LOGIN AND CHAIN OF CUSTODY

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10742-1	GF-RB-01	08-OCT-97	16-OCT-97	20-OCT-97
Field Rinsate Blank, Temp 4				
Location: RFG02-21A				
Water 1 S PERCHLORATE BY IC		Hold:05-NOV-97		
L10742-2	GF-RB-01	08-OCT-97	16-OCT-97	20-OCT-97
Field Rinsate Blank, Temp 4				
Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-3	GF-RB-01	08-OCT-97	16-OCT-97	20-OCT-97
Field Rinsate Blank, Temp 4				
Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-4	GF-RB-01	08-OCT-97	16-OCT-97	20-OCT-97
Field Rinsate Blank, Temp 4				
Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-5	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4				
Location: RFG02-21A				
Water 1 S PERCHLORATE BY IC		Hold:05-NOV-97		
L10742-6	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4				
Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-7	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4				
Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-8	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4				
Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-9	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4				
Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		

1016123

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10742-10	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4 , Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-11	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4 Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-12	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4 Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-13	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4 Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-14	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4 Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-15	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4 Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-16	GF-MW-14	08-OCT-97	16-OCT-97	20-OCT-97
MS/MSD, Temp 4 Location: RFG02-21A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-17	GF-MW-00	08-OCT-97	16-OCT-97	20-OCT-97
Temp 4 Location: RFG02-22A				
Water 1 S PERCHLORATE BY IC		Hold:05-NOV-97		
L10742-18	GF-MW-00	08-OCT-97	16-OCT-97	20-OCT-97
Temp 4 Location: RFG02-22A				
Water 1 S NONE		Hold:18-OCT-97		

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10742-19	GF-MW-00	08-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-20	GF-MW-00	08-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S NONE		Hold:18-OCT-97		
L10742-21	GF-MW-03	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S PERCHLORATE BY IC		Hold:06-NOV-97		
L10742-22	GF-MW-03	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-23	GF-MW-03	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-24	GF-MW-03	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-25	GF-MW-06	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S PERCHLORATE BY IC		Hold:06-NOV-97		
L10742-26	GF-MW-06	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-27	GF-MW-06	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S NONE		Hold:19-OCT-97		

1016123

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PE Date
L10742-28	GF-MW-06	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-22A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-29	GF-MW-05	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S PERCHLORATE BY IC		Hold:06-NOV-97		
L10742-30	GF-MW-05	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-31	GF-MW-05	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-32	GF-MW-05	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-33	GF-MW-608B	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S PERCHLORATE BY IC		Hold:06-NOV-97		
L10742-34	GF-MW-608B	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-35	GF-MW-608B	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-36	GF-MW-16B	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S PERCHLORATE BY IC		Hold:06-NOV-97		

010123

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PE Date
L10742-37	GF-MW-16B	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-38	GF-MW-16B	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-39	GF-MW-16B	09-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:19-OCT-97		
L10742-40	GF-IN-01	10-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S PERCHLORATE BY IC		Hold:07-NOV-97		
L10742-41	GF-IN-01	10-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:20-OCT-97		
L10742-42	GF-IN-01	10-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:20-OCT-97		
L10742-43	GF-IN-01	10-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:20-OCT-97		
L10742-44	GF-EF-01	10-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S PERCHLORATE BY IC		Hold:07-NOV-97		
L10742-45	GF-EF-01	10-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:20-OCT-97		

1016123

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10742-46	GF-EF-01	10-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:20-OCT-97		
L10742-47	GF-EF-01	10-OCT-97	16-OCT-97	20-OCT-97
Temp 4				
Location: RFG02-23A				
Water 1 S NONE		Hold:20-OCT-97		
L10742-48	REPORT TYPE	16-OCT-97	16-OCT-97	20-OCT-97
Location:				
Water 1 S DAVIS				
Water 1 S INORG TYPE 2 RPT				

Signature: [signature]

Date: 10/16/97

10/16/23

CHAIN OF CUSTODY RECORD

L10742

ENVIRONMENTAL PROTECTION AGENCY – REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address:
Goose Farm Site
Plumsted Township, Ocean County, NJ

Sample Number	Number of Containers	Description of Samples
091325	4	GF-RB-01 Perchlorate Anion Analysis: 1-1Lt Plastic JAR & 3-250ml Glass JAR
203317	12	GF-MW-14 Perchlorate Anion Analysis: 3-1Lt Plastic JAR & 9-250ml Glass JAR
203318	4	GF-MW-00 Perchlorate Anion Analysis: 1-1Lt Plastic JAR & 3-250ml Glass JAR
203319	4	GF-MW-03 SAME AS 203318
203320	4	GF-MW-06 SAME AS 203318
203321	4	GF-MW-05 SAME AS 203318
203322	4	GF-MW-60BB SAME AS 203318
203323	4	GF-MW-16B SAME AS 203318
203324	4	GF-IN-01 SAME AS 203318
203325	4	GF-EF-01 SAME AS 203318

Person Assuming Responsibility for Sample: Michael A Mercado

Time: 1500 Date: 10/15/97

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
All		FEDERAL EXPRESS Airbill # 417828 4143 417828 4154	1530	10/15/97	
Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
			1046	16 Oct 97	RELEASE TO LAB
Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
			1048	10/16/97	

Page No. 106

L10742

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name: Goose Farm Sampling Event

Collector(s): M. DeNino/M. Mercado Affiliation: U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other: Low Flow

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle) (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	**Cleaning Procedure**	**Landfill**	**Industrial**
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
~~Metal~~	Acid Rinse	Test Well	Holding Pond
POA Vial	**Solvent Rinse:**	Depth:	Drum
Cubitainer	Acetone	Other:	Waste Pile
Acetate Core	Hexane		**Municipal Treatment**
Paper Cap	Methylene Chloride	**Storage Tank**	Influent
(~~Teflon Cap~~)	Other (Specify): Precleaned Glassware From E.S.D.	Top	Effluent-Cl
Foil Cap		Middle	Effluent-Non Cl
Other		Bottom	Sludge
		Truck	Ambient
Preservation		Drum	Lake
Acid		Tank	Stream
Solvent		Other	Pond
Chemical			Ocean
(Wet Ice)		**Wells**	Estuary
Dry Ice		(~~Monitoring~~)	
Ambient		Production	
Other		Drinking	
		Private	

Sample Location Description:

Goose Farm's -RB-01 (Field Rinsate Blank)

Remarks:

Perchlorate Anion Analysis:
1-1Lt Plastic Jar and 3-250ml Glass Jar
Cool to 4°C

Samples to: Bact | Bio | Chem ✓ | Other

Station No.: GF-RB-01

Sample Depth (Ft.)/Fac. Loc. Code:

Lab Number: 091325

Type of Sample: Grab ✓ | Composite: Time | Space

Collection (Ending) Date: Yr 97 Mo 08 Day 07

Ending Time (24 Hr): 1220

Beginning Date: Yr | Mo | Day

Beginning Time (24 Hr):

pH:

Sample Temp. (°C):

DO (mg/l):

Cond. (uMHOS/CM):

Salinity(‰):

Sample Split: ☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

L10742

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name Goose Farm Sampling Event

Collector(s) M. DENNO / M. MERCADO Affiliation U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other Low Flow

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle) (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	Cleaning Procedure	Landfill	Industrial
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
Metal	Acid Rinse	Test Well	Holding Pond
POA Vial	Solvent Rinse:	Depth:	Drum
Cubitainer	Acetone	Other:	Waste Pile
Acetate Core	Hexane		Municipal Treatment
Paper Cap	Methylene Chloride	Storage Tank	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-Cl
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non Cl
Other		Bottom	Sludge
Preservation		Truck	Ambient
Acid		Drum	Lake
Solvent		Tank	Stream
Chemical		Other	Pond
(Wet Ice)		Wells	Ocean
Dry Ice		(Monitoring)	Estuary
Ambient		Production	
Other		Drinking	
		Private	

Sample Location Description:

Goose Farm, MW-14

Remarks: MS/MSD

Perchlorate Anion Analysis:

3 - 1 Lt Plastic Jar and 9 - 250ml Glass Jars

Cool to 4°C

Samples to:

Bact	Bio	Chem ✓	Other

Station No. GF-MW-14

Sample Depth (Ft.)/Fac. Loc. Code

Lab Number 203317

Type of Sample

Grab	Composite	
	Time	Space
✓		

Collection (Ending) Date

Yr	Mo	Day
97	10	08

Ending Time (24 Hr) 1450

Beginning Date

Yr	Mo	Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☑ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

1016123

FIELD DATA SHEET

L1042

ENVIRONMENTAL PROTECTION AGENCY · Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name: Goose Farm Sampling Event

Collector(s): M. Dennis / M. Hercado Affiliation: U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other: Low Flow

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle): (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	Cleaning Procedure	Landfill	Industrial
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
Metal	Acid Rinse	Test Well	Holding Pond
POA Vial	Solvent Rinse:	Depth:	Drum
Cubitainer	Acetone	Other:	Waste Pile
Acetate Core	Hexane		Municipal Treatment
Paper Cap	Methylene Chloride	Storage Tank	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-CI
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non CI
Other		Bottom	Sludge
Preservation		Truck	Ambient
Acid		Drum	Lake
Solvent		Tank	Stream
Chemical		Other	Pond
(Wet Ice)		Wells	Ocean
Dry Ice		(Monitoring)	Estuary
Ambient		Production	
Other		Drinking	
		Private	

Sample Location Description:

Goose Farm MW-00

Remarks:

Perchlorate Anion Analysis:
1-1Lt Plastic Jar and 3-250ml Glass Jars
Cool to 4°C

Samples to:

Bact	Bio	Chem	Other
		✓	

Station No.: GF-MW-00

Sample Depth (Ft.)/Fac. Loc. Code

Lab Number: 203318

Type of Sample

Grab	Composite	
	Time	Space
✓		

Collection (Ending) Date

Yr	Mo	Day
97	10	08

Ending Time (24 Hr): 1450

Beginning Date

Yr	Mo	Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☑ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

10161123

FIELD DATA SHEET

L10742

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name: Goose Farm Sampling Event

Collector(s): M. Denno / M. Mercado Affiliation: U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other: Low Flow

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle): (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	Cleaning Procedure	Landfill	Industrial
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
~~Metal~~	Acid Rinse	Test Well	Holding Pond
POA Vial	Solvent Rinse:	Depth:	Drum
Cubitainer	Acetone	Other:	Waste Pile
Acetate Core	Hexane		Municipal Treatment
Paper Cap	Methylene Chloride	Storage Tank	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-Cl
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non Cl
Other		Bottom	Sludge
Preservation		Truck	Ambient
Acid		Drum	Lake
Solvent		Tank	Stream
Chemical		Other	Pond
(Wet Ice)			Ocean
Dry Ice		Wells	Estuary
Ambient		~~Monitoring~~	
Other		Production	
		Drinking	
		Private	

Sample Location Description:

Goose Farm - MW 03

Remarks:

Perchlorate Anion Analysis:
1-1Lt Plastic Jar and 3-250ml Glass Jar
Cool to 4°C

Samples to: Bact | Bio | Chem ✓ | Other

Station No.: GF-MW-03

Sample Depth (Ft.)/Fac. Loc. Code:

Lab Number: 203319

Type of Sample: Grab ✓ | Composite: Time | Space

Collection (Ending) Date: Yr 97 Mo 10 Day 09

Ending Time (24 Hr): 1005

Beginning Date: Yr Mo Day

Beginning Time (24 Hr):

pH:

Sample Temp. (°C):

DO (mg/l):

Cond. (uMHOS/CM):

Salinity(‰):

Sample Split: ☐ Yes ☑ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

10/6/23

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY · Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

L10742

Project Name Goose Farm Sampling Event

Collector(s) M Denno/H. Mercado Affiliation U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other Low Flow

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle) (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	Cleaning Procedure	Landfill	Industrial
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
Metal	Acid Rinse	Test Well	Holding Pond
POA Vial	Solvent Rinse:	Depth:	Drum
Cubitainer	Acetone	Other:	Waste Pile
Acetate Core	Hexane		Municipal Treatment
Paper Cap	Methylene Chloride	Storage Tank	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-Cl
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non Cl
Other		Bottom	Sludge
Preservation		Truck	Ambient
Acid		Drum	Lake
Solvent		Tank	Stream
Chemical		Other	Pond
(Wet Ice)		Wells	Ocean
Dry Ice		(Monitoring)	Estuary
Ambient		Production	
Other		Drinking	
		Private	

Sample Location Description:

Goose Farm - MW06

Remarks:

Perchlorate Anion Analysis:

2 - 1Lt Plastic Jar and 3 - 250ml Glass Jar

Cool to 4°C

Samples to:

Bact	Bio	Chem ✓	Other

Station No. GF-MW-06

Sample Depth (Ft.)/Fac. Loc. Code

Lab Number 203320

Type of Sample

Grab	Composite	
	Time	Space
✓		

Collection (Ending) Date

Yr	Mo	Day
97	10	09

Ending Time (24 Hr) 1115

Beginning Date

Yr	Mo	Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☐ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

1016123

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

40742

Project Name: Goose Farm Sampling Event

Collector(s): M. Denno / M. Hercasa Affiliation: U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other: Low Flow

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle) (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	**Cleaning Procedure**	**Landfill**	**Industrial**
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
Metal	Acid Rinse	Test Well	Holding Pond
POA Vial	**Solvent Rinse:**	Depth:	Drum
Cubitainer	Acetone	Other:	Waste Pile
Acetate Core	Hexane		**Municipal Treatment**
Paper Cap	Methylene Chloride	**Storage Tank**	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-Cl
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non Cl
Other		Bottom	Sludge
		Truck	Ambient
Preservation		Drum	Lake
Acid		Tank	Stream
Solvent		Other	Pond
Chemical			Ocean
(Wet Ice)		**Wells**	Estuary
Dry Ice		(Monitoring)	
Ambient		Production	
Other		Drinking	
		Private	

Sample Location Description:

Goose Farm - MW05

Remarks:

Perchlorate Anion Analysis:
1-1Lt Plastic Jar and 3-250ml Glass Jar
Cool to 4°C

Samples to: Bact | Bio | (Chem ✓) | Other

Station No.: GF-MW-05

Sample Depth (Ft.)/Fac. Loc. Code:

Lab Number: 203321

Type of Sample: Grab (✓) | Composite: Time | Space

Collection (Ending) Date: Yr 07 | Mo 10 | Day 09

Ending Time (24 Hr): 1230

Beginning Date: Yr | Mo | Day

Beginning Time (24 Hr):

pH:

Sample Temp. (°C):

DO (mg/l):

Cond. (uMHOS/CM):

Salinity(‰):

Sample Split: ☐ Yes (☐ No ✓)

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPO-11-82-2

1016123

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

40742

Project Name Goose Farm Sampling Event

Collector(s) M Denno / M. Mercado Affiliation U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other Low Flow

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle) (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	Cleaning Procedure	Landfill	Industrial
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
Metal	Acid Rinse	Test Well	Holding Pond
POA Vial	Solvent Rinse:	Depth:	Drum
Cubitainer	Acetone	Other:	Waste Pile
Acetate Core	Hexane		Municipal Treatment
Paper Cap	Methylene Chloride	Storage Tank	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-Cl
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non Cl
Other		Bottom	Sludge
		Truck	Ambient
Preservation		Drum	Lake
Acid		Tank	Stream
Solvent		Other	Pond
Chemical			Ocean
(Wet Ice)		Wells	Estuary
Dry Ice		(Monitoring)	
Ambient		Production	
Other		Drinking	
		Private	

Sample Location Description:

Goose Farm #MW-608B

Remarks:

Perchlorate Anion Analysis:
1-1Lt Plastic Jar and 3-250ml Glass Jar
Cool to 4°C

Samples to:

Bact	Bio	Chem	Other
		✓	

Station No. GF-MW-608B

Sample Depth (Ft.)/Fac. Loc. Code

Lab Number 203322

Type of Sample

Grab	Composite	
	Time	Space
✓		

Collection (Ending) Date

Yr	Mo	Day
97	10	09

Ending Time (24 Hr) 1430

Beginning Date

Yr	Mo	Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☑ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

1016123

FIELD DATA SHEET

L10742

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name Goose Farm Sampling Event

Collector(s) M. DENNO/M. MERCADO Affiliation U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
~~Automatic~~
Other Low Flow

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle) (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	Cleaning Procedure	Landfill	Industrial
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
Metal	Acid Rinse	Test Well	Holding Pond
POA Vial	Solvent Rinse:	Depth:	Drum
Cubitainer	Acetone	Other:	Waste Pile
Acetate Core	Hexane		Municipal Treatment
Paper Cap	Methylene Chloride	Storage Tank	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-Cl
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non Cl
Other		Bottom	Sludge
		Truck	Ambient
Preservation		Drum	Lake
Acid		Tank	Stream
Solvent		Other	Pond
Chemical			Ocean
(Wet Ice)		Wells	Estuary
Dry Ice		(Monitoring)	
Ambient		Production	
Other		Drinking	
		Private	

Sample Location Description:

Goose ~~Farm~~ Goose [redacted] MW 16B

Remarks:

Perchlorate Anion Analysis:
1-1Lt Plastic Jar and 3-250mL Glass Jars
Cool to 4°C

Samples to:

Bact	Bio	Chem ✓	Other

Station No. GF-MW-16B

Sample Depth (Ft.)/Fac. Loc. Code

Lab Number 203323

Type of Sample

Grab	Composite	
	Time	Space
✓		

Collection (Ending) Date Yr 97 Mo 10 Day 09

Ending Time (24 Hr) 1510

Beginning Date Yr Mo Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☑ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

1016123

L10712

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name Goose Farm Sampling Event

Collector(s) McDERMOTT/MERCADO Affiliation U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

SUBSTRATE TYPE (Circle) (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	Cleaning Procedure	Landfill	Industrial
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
Metal	Acid Rinse	Test Well	Holding Pond
POA Vial	Solvent Rinse:	Depth:	Drum
Cubitainer	Acetone	Other: _____	Waste Pile
Acetate Core	Hexane	_____	Municipal Treatment
Paper Cap	Methylene Chloride	Storage Tank	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-Cl
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non Cl
Other _____		Bottom	Sludge
_____		Truck	Ambient
Preservation		Drum	Lake
Acid _____		Tank	Stream
Solvent _____		Other _____	Pond
Chemical _____		_____	Ocean
(Wet Ice)		Wells	Estuary
Dry Ice		Monitoring	
Ambient		Production	
Other _____		Drinking	
_____		Private	

Sample Location Description:

Goose Farm's P&T influent

Remarks:

Perchlorate Anion Analysis:
1-1Lt Plastic Jar and 3-250 ml Glass Jar
Cool to 4°C

Samples to:

Bact	Bio	Chem ✓	Other

Station No. GF-IN-01

Sample Depth (Ft.)/Fac. Loc. Code

Lab Number 203324

Type of Sample

Grab	Composite	
	Time	Space
✓		

Collection (Ending) Date

Yr	Mo	Day
97	10	10

Ending Time (24 Hr) 1130

Beginning Date

Yr	Mo	Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☐ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

1016123

FIELD DATA SHEET

L10742

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name: Goose Farm Sampling Event

Collector(s): M Denno / J. Hudek Affiliation: U.S. EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

SUBSTRATE TYPE (Circle) (Aqueous) Sediment Sludge Oil Biological
Solvent Extract Other ( )

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)		Sample Source Type (Circle)	
Container	**Cleaning Procedure**	**Landfill**	**Industrial**
(Glass Jar)	Detergent Wash	Leachate	Effluent
(Plastic Jar)	Water Rinse	Drum	Process Stream
Metal	Acid Rinse	Test Well	Holding Pond
POA Vial	**Solvent Rinse:**	Depth:	Drum
Cubitainer	Acetone	Other: _____	Waste Pile
Acetate Core	Hexane	_____	**Municipal Treatment**
Paper Cap	Methylene Chloride	**Storage Tank**	Influent
(Teflon Cap)	Other (Specify):	Top	Effluent-Cl
Foil Cap	Precleaned Glassware from ESS	Middle	Effluent-Non Cl
Other _____		Bottom	Sludge
_____		**Truck**	Ambient
Preservation		Drum	Lake
Acid _____		Tank	Stream
Solvent _____		Other _____	Pond
Chemical _____		_____	Ocean
(Wet Ice)		**Wells**	Estuary
Dry Ice		Monitoring	
Ambient		Production	
Other _____		Drinking	
_____		Private	

Sample Location Description:

Goose Farm's P!T Effluent

Remarks:

Perchlorate Anion Analysis!

1-1 Lt Plastic Jar and 3-250 ml Glass Jar

Cool to 4°C

Samples to: Bact | Bio | Chem ✓ | Other

Station No.: GF-EF-01

Sample Depth (Ft.)/Fac. Loc. Code:

Lab Number: 203325

Type of Sample: Grab ✓ | Composite: Time | Space

Collection (Ending) Date: Yr 97 | Mo 10 | Day 10

Ending Time (24 Hr): 1135

Beginning Date: Yr | Mo | Day

Beginning Time (24 Hr):

pH:

Sample Temp. (°C):

DO (mg/l):

Cond. (uMHOS/CM):

Salinity(‰):

Sample Split ☐ Yes ☐ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Form: FTB RPD-11-82-2

101623

LAS LABORATORIES, INC.

Page ___of___

Sample Receiving Checklist

Client Name: US EPA Job No: L10742 Cooler ID:

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 4°C

temperature of temp. blank upon receipt:

	yes	no	n/a	*Comments/Discrepancies
custody seals present	—			
custody seals intact	—			
chain of custody present	—			
blue ice(or equiv.)present	—			
blue ice(or equiv.)frozen	—			
rad survey completed	—			

SAMPLE CONDITION UPON RECEIPT

	yes	no	n/a	*Comments/Discrepancies
all bottles labeled	—			
bottle custody seal present		—		
bottle custody seal intact		—		
samples intact	—			
proper container used for sample	—			
sample volume sufficient for analysis	—			
proper pres. indicated on the COC	—			
VOA's contain headspace			—	
are samples bi-phasic(if so, indicate sample ID's):			—	

MISCELLANEOUS ITEMS

	yes	no	n/a	*Comments/Discrepancies
samples with short holding times		—		
samples to subcontract		—		

ADDITIONAL COMMENTS/DISCREPANCIES Received only 3 containers (1 liter poly + 2 8oz glass jars) for DH GF MW-60RB rather than 4 as stated on COC. A thorough search of cooler + garbage cans did not locate the missing container. CSR notified (AH) I also search for missing Container Couldn't find it. Robin Gilbert collect date on DH GF-RB-01 should be 10-8-97 (COC read 97-8-97) (AH)

Completed by / date: Gail Ackerman 10/16/97

sent to the client (date initials): ** Client's signature upon receipt:

Notes: * = *contact the appropriate CSR of any discrepancies immediately upon receipt*

** = *please review this information and return via facsimile to the appropriate CSR (702)361-8146*

VERSION 3.0(03-03-97)

2 of 2 10/21/97

LAS LABORATORIES, INC.

Page ___of___

Sample Receiving Checklist

Client Name: US EPA Job No: L10742 Cooler ID: _____

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 3°C

temperature of temp. blank upon receipt:

	yes	no	n/a	*Comments/Discrepancies
custody seals present	—			
custody seals intact	—			
chain of custody present	—			
blue ice(or equiv.)present	—			
blue ice(or equiv.)frozen	—			
rad survey completed	—			

SAMPLE CONDITION UPON RECEIPT

	yes	no	n/a	*Comments/Discrepancies
all bottles labeled	—			
bottle custody seal present		—		
bottle custody seal intact			—	
samples intact	—			
proper container used for sample	—			
sample volume sufficient for analysis	—			
proper pres. indicated on the COC	—			
VOA's contain headspace			—	
are samples bi-phasic(if so, indicate sample ID's):			—	

MISCELLANEOUS ITEMS

	yes	no	n/a	*Comments/Discrepancies
samples with short holding times		—		
samples to subcontract		—		

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: Gail Ackerman 10/16/97

sent to the client (date initials): _____ ** Client's signature upon receipt: _____

Notes: * = contact the appropriate CSR of any discrepancies immediately upon receipt

** = please review this information and return via facsimile to the appropriate CSR (702)361-8146

VERSION 3.0(03-03-97)

10/16/97

LAS LABORATORIES

LOGIN pH CHECK

CLIENT: Lockheed Martin Adv. Env. Sys. (LMAES)(123)
PROJECT: LM PERCHLORATE
LOGIN: L10742
MATRIX: Water(1)

NO	LAL #	CLIENT ID	PRODUCT	pH
1	L10742-1	GF-RB-01	PERCHLORATE BY IC	6
2	L10742-2	GF-RB-01	NONE	6
3	L10742-3	GF-RB-01	NONE	6
4	L10742-4	GF-RB-01	NONE	6
5	L10742-5	GF-MW-14	PERCHLORATE BY IC	7
6	L10742-6	GF-MW-14	NONE	7
7	L10742-7	GF-MW-14	NONE	7
8	L10742-8	GF-MW-14	NONE	7
9	L10742-9	GF-MW-14	NONE	7
10	L10742-10	GF-MW-14	NONE	7
11	L10742-11	GF-MW-14	NONE	7
12	L10742-12	GF-MW-14	NONE	7
13	L10742-13	GF-MW-14	NONE	7
14	L10742-14	GF-MW-14	NONE	7
15	L10742-15	GF-MW-14	NONE	7
16	L10742-16	GF-MW-14	NONE	7
17	L10742-17	GF-MW-00	PERCHLORATE BY IC	7
18	L10742-18	GF-MW-00	NONE	7
19	L10742-19	GF-MW-00	NONE	7
20	L10742-20	GF-MW-00	NONE	7
21	L10742-21	GF-MW-03	PERCHLORATE BY IC	7
22	L10742-22	GF-MW-03	NONE	7
23	L10742-23	GF-MW-03	NONE	7
24	L10742-24	GF-MW-03	PERCHLORATE BY IC	7
25	L10742-25	GF-MW-06	NONE	7
26	L10742-26	GF-MW-06	NONE	7

Signature: Gail Ackerman Date: 10/16/97

1016123

LAS LABORATORIES

LOGIN pH CHECK

CLIENT: Lockheed Martin Adv. Env. Sys. (LMAES)(123)
PROJECT: LM PERCHLORATE
LOGIN: L10742
MATRIX: Water(1)

NO	LAL #	CLIENT ID	PRODUCT	pH
27	L10742-27	GF-MW-06	NONE	7
28	L10742-28	GF-MW-06	NONE	7
29	L10742-29	GF-MW-05	PERCHLORATE BY IC	7
30	L10742-30	GF-MW-05	NONE	7
31	L10742-31	GF-MW-05	NONE	7
32	L10742-32	GF-MW-05	NONE	7
33	L10742-33	GF-MW-6088	PERCHLORATE BY IC	7
34	L10742-34	GF-MW-6088	NONE	7
35	L10742-35	GF-MW-6088	NONE	7
36	L10742-36	GF-MW-168	PERCHLORATE BY IC	7
37	L10742-37	GF-MW-168	NONE	7
38	L10742-38	GF-MW-168	NONE	7
39	L10742-39	GF-MW-168	NONE	7
40	L10742-40	GF-IN-01	PERCHLORATE BY IC	7
41	L10742-41	GF-IN-01	NONE	7
42	L10742-42	GF-IN-01	NONE	7
43	L10742-43	GF-IN-01	NONE	7
44	L10742-44	GF-EF-01	PERCHLORATE BY IC	7
45	L10742-45	GF-EF-01	NONE	7
46	L10742-46	GF-EF-01	NONE	7
47	L10742-47	GF-EF-01	NONE	7
48	L10742-48	REPORT TYPE	DAVIS	
49	L10742-48	REPORT TYPE	INORG TYPE 2 RPT	

Signature: Gail Ackerman Date: 10/16/97

1016123

LAS
A Subsidiary of SPL Laboratories

Sample Login
Login Review Checklist

Login Number L10742

The Login Review Checklist documents the review of the information entered into the ACS database for accuracy and useability. For effective login review, five items are necessary. They are the Chain of Custody (COC) (or equivalent), the Sample Summary Report (SSR), the Login COC Report, the Sample Receiving Checklist, and the Quote/COC Reconciliation Form. This checklist should be affixed to each login package prior to distribution.

SAMPLE SUMMARY REPORT	YES	NO	N/A	COMMENT
1. Are all samples on the COC logged in or the proper discrepancies noted on the SSR?	+			
2. Are all Client Sample IDs logged in correctly?	+			
3. Are all matrices indicated correctly?	+			
4. Are all analyses on the COC logged in for appropriate samples?	+			
5. Are samples logged in for the proper products?	+			

LOGIN CHAIN OF CUSTODY REPORT	YES	NO	N/A	COMMENT
1. Are the collect, receive, and due dates correct for every sample?	+			
2. Have all appropriate comments been included?	+			

SAMPLE RECEIVING CHECKLIST	YES	NO	N/A	COMMENT
1. Are all discrepancies between the COC and login noted (if applicable)?	+		10/16/97	see sample receiving checklist

LOGIN pH CHECK (applicable projects only)	YES	NO	N/A	COMMENT
1. Has the pH of all aqueous samples been checked and the report attached?	+			

Lori Oelkerman 10/16/97
Login Specialist signature date

Secondary Reviewer signature 10/16/97
date

Jerry L. Davis 10/16/97
Project Management signature date

revised 07-17-97, dcf, H:\fischer\sop\loginrev.chk

10161123

CHAIN OF CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY – REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address: Goose Farm Site
Plumsted Township, Ocean County, NJ

Sample Number	Number of Containers	Description of Samples	
091325	4	GF-RB-01	Perchlorate Anion Analysis: 1-1Lt [redacted] JAR & 3-250ml Glass JAR
203317	12	GF-MW-M	Perchlorate Anion Analysis: 3-1Lt P[redacted] & 9-250ml Glass JAR
203318	4	GF-MW-00	Perchlorate Anion Analysis: 1-1Lt A[redacted] JAR & 3-250ml Glass JAR
203319	4	GF-MW-03	SAME AS 203318
203320	4	GF-MW-06	SAME AS 203318
203321	4	GF-MW-05	SAME AS 203318
203322	4	GF-MW-60BB	SAME AS 203318
203323	4	GF-MW-16B	SAME AS 203318
203324	4	GF-IN-01	SAME AS 203318
203325	4	GF-EF-01	SAME AS 203318

only login 1 poly container for perchlorate Analysis. The rest of the containers login for NO3.NE

Person Assuming Responsibility for Samples: Michael A [redacted] Time: 1500 Date: 10/14/97

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
All	[signature]	FEDERAL EXPRESS Air bills 417828 4143 417828 4154	1530	10/15/97	
Sample Number	Relinquished By: [signature]	Received By:	Time 1046	Date 16 OCT 97	Reason for Change of Custody RETURN TO LAB
Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
Sample Number	Relinquished By:	Received By: [signature]	Time 1048	Date 10/10/97	Reason for Change of Custody

Page No.

1016123

LAS Laboratories
SAMPLE SUMMARY REPORT (su02 S1)
Lockheed Martin Adv. Env. Sys. (LMAES)

GF-EF-01	L10742-44	Water	PERCHLORATE BY IC
	L10742-45	Water	NONE
	L10742-46	Water	NONE
	L10742-47	Water	NONE
GF-IN-01	L10742-40	Water	PERCHLORATE BY IC
	L10742-41	Water	NONE
	L10742-42	Water	NONE
	L10742-43	Water	NONE
GF-MW-00	L10742-17	Water	PERCHLORATE BY IC
	L10742-18	Water	NONE
	L10742-19	Water	NONE
	L10742-20	Water	NONE
GF-MW-03	L10742-21	Water	PERCHLORATE BY IC
	L10742-22	Water	NONE
	L10742-23	Water	NONE
	L10742-24	Water	NONE
GF-MW-05	L10742-29	Water	PERCHLORATE BY IC
	L10742-30	Water	NONE
	L10742-31	Water	NONE
	L10742-32	Water	NONE
GF-MW-06	L10742-25	Water	PERCHLORATE BY IC
	L10742-26	Water	NONE
	L10742-27	Water	NONE
	L10742-28	Water	NONE
GF-MW-14	L10742-5	Water	PERCHLORATE BY IC
	L10742-6	Water	NONE
	L10742-7	Water	NONE
	L10742-8	Water	NONE
	L10742-9	Water	NONE
	L10742-10	Water	NONE
	L10742-11	Water	NONE
	L10742-12	Water	NONE
	L10742-13	Water	NONE
	L10742-14	Water	NONE
	L10742-15	Water	NONE
	L10742-16	Water	NONE
GF-MW-16B	L10742-36	Water	PERCHLORATE BY IC
	L10742-37	Water	NONE
	L10742-38	Water	NONE
	L10742-39	Water	NONE
GF-MW-608B	L10742-33	Water	PERCHLORATE BY IC
	L10742-34	Water	NONE
	L10742-35	Water	NONE
GF-RB-01	L10742-1	Water	PERCHLORATE BY IC
	L10742-2	Water	NONE

1016123

LAS Laboratories
SAMPLE SUMMARY REPORT (su02 S1)
Lockheed Martin Adv. Env. Sys. (LMAES)

Client Sample Number	LAS Sample Number	SDG Number	Matrix	Analysis
	L10742-3		Water	NONE
	L10742-4		Water	NONE
REPORT TYPE	L10742-48		Water	DAVIS
	L10742-48		Water	INORG TYPE 2 RPT

1016123

SAMPLE RESULTS

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-RB-01
Date Collected: 08-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-1

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-MW-00
Date Collected: 08-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-17

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-MW-14
Date Collected: 08-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-5

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-MW-03
Date Collected: 09-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-21

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-MW-06
Date Collected: 09-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-25

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-MW-05
Date Collected: 09-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-29

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-MW-608B
Date Collected: 09-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-33

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-MW-16B
Date Collected: 09-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-36

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-IN-01
Date Collected: 10-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-40

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

WET CHEM DATA REPORT
Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)
Project Name: LM PERCHLORATE
Project Desc:

Client Sample ID: GF-EF-01
Date Collected: 10-OCT-97
Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97	L10742-44

RPT NAME: genions2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg QC Flag: Y

LAS Laboratories, Inc.

METHOD BLANK DATA SUMMARY

Login/SDG Number: L10742

Analyte	Batch ID	Date Analyzed	LAL ID	MB Result	MDL	RDL	Units	Data Qual
Perchlorate	54764	17-OCT-97	54764MB	<0.0010	0.0010	0.0050	mg/L	U

RPT NAME: genionqc2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

LAS Laboratories, Inc.

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L10742

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	MS Result	SMP Result	Known Value	Units	% Rec	Data Qual	QC Limits
Perchlorate	54764	17-OCT-97	GF-MW-14	L10742-5	54764MS	0.360	<0.0010	0.375	mg/L	96		75-125

RPT NAME: genionqc2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

LAS Laboratories, Inc.

MATRIX SPIKE DUPLICATE DATA SUMMARY

Login/SDG Number: L10742

Analyte	Batch ID	Date Analyzed	Client ID	LAL ID	Sample ID	MS Result	% REC	MSD Result	Known Value	% REC	RPD	Data Qual	Units	REC Limits	RPD Limit
Perchlorate	54764	17-OCT-97	GF-MW-14	L10742-5	54764MSD	0.360	96.	0.353	0.375	94.	2.0		mg/L	75-125	20

RPT NAME: genionqc2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

LAS Laboratories, Inc.

LCS DATA SUMMARY

Login/SDG Number: L10742

Analyte	Batch ID	Date Analyzed	LAL ID	LCS Result	Known Value	Units	% Rec	Data Qual	QC Limits
Perchlorate	54764	17-OCT-97	54764LCS	0.234	0.250	mg/L	94		80-120

RPT NAME: genionqc2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg